

ABSTRACT

The parallel processes run scheduling method, disclosed herein, reduces the overhead due to scheduling by coordinating the processing steps of the processors, not requiring explicit processor-to-processor communication. When being requested to activate or deactivate a parallel program, the parallel program manager commands the process queue managers on the processors to generate or remove the allocated process of the program. On each processor, in obedience to the command, the process queue manager enqueues or remove the process into or from the process queue. Each processor is equipped with a processes number counter to store the number of processes to run on the processor, corresponding to the number of parallel programs activated and an integrating counter that increments over time in synchronization with all other processors. Out of the processes in the process queue, a process to execute is determined to be  $n$ -th process from the beginning of the process queue, where  $n$  is obtained by  $(\text{the value of the integrating counter} / \text{time slice}) \bmod \text{the value of the processes number counter}$ . During a time slice, one process is to be executed.

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